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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/187,370	11/06/1998	DONALD C. WILCOXSON	22-0009	2971

7590                    03/21/2002

TRW  
LAW DEPARTMENT  
ONE SPACE PARK  
BUILDING E2/6072  
REDONDO BEACH, CA 90278

[REDACTED] EXAMINER

ABELSON, RONALD B

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2663

DATE MAILED: 03/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/187,370	WILCOXSON ET AL.
	Examiner	Art Unit
	Ronald Abelson	2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 06 November 1998.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-18 and 20 is/are rejected.
- 7) Claim(s) 19 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)                  4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                  5) Notice of Informal Patent Application (PTO-152)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                  6) Other:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 11, and 16 rejected under 35 U.S.C. 102(e) as being anticipated by Schmidt (US 5,754,536).

Regarding claim 11, Schmidt teaches a method and apparatus for interference management (col. 4 lines 36 - 51) of a satellite communications system (fig. 3) serving multiple users (fig. 3 elements 42, 52, 54). The system contains a satellite (fig. 3 element 44) supporting communications uplinks and

downlinks (fig. 3 element 56) between multiple users (fig. 3 elements 42, 52, 54). The system also contains a control processor (fig. 3 box 74) that minimizes intra-system interference between the users by allocating a connection parameter / carrier frequency and timeslot, TDMA/FDMA (col. 5 lines 43 - 59, col. 4 lines 36 -51). The applicant discusses intra-system interference between multiple user terminals (claim 11 lines 11 -12). Referring to the specification, these multiple user terminals are located in multiple cells (pg. 8 lines 1 - 3). Schmidt also teaches a system to reduce interference between users in multiple cells (inter-cell, col. 4 lines 36 - 51).

Regarding claims 1-2, in addition to the limitations listed in claim 11, Schmidt teaches a method comprising receiving a request for service from a user terminal (speech detected, col. 5 lines 43 - 59). The system accesses, determines, and allocates a plurality of communications system parameters (carrier frequency and timeslot, col. 5 lines 43 - 59). The system makes a communications connection with the satellite by the user terminal using the connection parameters (fig. 3. element 56, col. 5 lines 43 - 59).

Regarding claims 3-4, Schmidt teaches the plurality of communications systems parameters includes active user terminal parameters (carrier frequency and timeslot, col. 5 lines 43 - 59).

Regarding claim 8 - 9, Schmidt teaches frequency channel and time slot allocation (fig. 3. element 56, col. 5 lines 43 - 59).

Regarding claim 10, the combination of Schmidt teaches updating the communications system parameter after the communications connection ends (reuse, reallocated, col. 4 lines 37 - 51).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claim 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt, and further in view of Knudsen (US 5,448,621).

Regarding claim 16, in addition to the limitations listed in claim 1, Schmidt teaches frequency channel and time slot allocation (fig. 3. element 56, col. 5 lines 43 - 59).

Schmidt fails to teach periodic redetermining of the frequency channel and time slot allocation.

Knudsen teaches periodic redetermining of the frequency channel and time slot allocation (col. 11 line 63 - col. 12 line 6).

Therefore it would have been obvious to one of ordinary skill in the art, having both Schmidt and Knudsen before him/her and with the teachings [a] as shown by Schmidt, a method and apparatus for interference management of a satellite communications system serving multiple users, and [b] as shown by Knudsen periodic redetermining of the frequency channel and time slot allocation, to be motivated to modify the system of Schmidt to include the dynamic reallocation algorithm of Knudsen. The algorithm could be implemented in a software routine located at switching facility (fig. 3 box 74). This would allow for the frequency channel and time slots assigned to a user to be changed during a transmission. This would alleviate

problems arising if the frequency channel currently serving a transmission should become subject to interference after the assignment was made.

Regarding claims 6 and 17, the combination of Schmidt and Knudsen teaches redetermining the frequency channel and time slot is made while the connection is active (Knudsen: col. 12 lines 17 - 40).

Regarding claims 7 and 15, the combination of Schmidt and Knudsen teaches redetermining the connection parameter for the user terminal based upon updated parameters (dynamic reallocation, Knudsen: col. 11 line 63 - col. 12 line 6).

Regarding claims 13 and 20, the combination of Schmidt and Knudsen teaches allocation of a frequency channel and time slot based upon locations of active user terminals (col. 15 lines 45 - 58).

Regarding claim 19, the combination of Schmidt and Knudsen teaches updating the databases after the communication connection has ended. See rejections for claims 10 and 18.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt as applied to claim 11 above, and further in view of Dent (US 5,631,898).

Regarding claim 12, Schmidt is silent on the type of antenna.

Dent (US 5,631,898) teaches multi-beam antennas in a FDMA/TDMA communications environment (fig. 7 element 470).

Therefore it would have been obvious to one of ordinary skill in the art, having both Schmidt and Dent before him/her and with the teachings [a] as shown by Schmidt, a method and apparatus for interference management of a satellite communications system serving multiple users, and [b] as shown by Dent multi-beam antennas in a FDMA/TDMA communications environment, to be motivated to modify the system of Schmidt by using a multi-beam antenna in the system (fig. 3 element 44). This would improve system since multi-beam antennas can cover more area than single beam antennas.

6. Claims 5/14/18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Schmidt and Dent as applied to claims 1/11/16 above, and further in view of Sorber (US 5,631,898).

The combination of Schmidt and Dent teaches user database parameter / time and frequency (Schmidt: col. 5 lines 43 - 59,

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col. 4 lines 36 -51), antenna pattern parameters (Dent: col. 40 line 65 - col. 41 line 14), and spacecraft/antenna pointing error parameters (Dent: attitude control, col. 44 lines 31 - 54)

The combination of Schmidt and Dent fails to teach link condition monitoring.

Sorber teaches link condition monitoring (col. 1 line 66 - col. 2 line 17).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Schmidt and Dent and Sorber before him/her and with the teachings [a] as shown by the combination of Schmidt and Dent, a method and apparatus for interference management of a satellite communications system serving multiple users, and [b] as shown by Sorber link condition monitoring, to be motivated to modify the system of the combination of Schmidt and Dent by monitoring link capacity. This could be performed by continually measuring bandwidth usage and availability. This would be beneficial in preventing congestion (col. 1 line 66 - col. 2 line 17).

***Allowable Subject Matter***

7. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent

form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: Nothing in the prior art teaches or fairly suggest updating the antenna pattern parameters as described by Dent after the communication connection has ended.

*Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

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*RA*  
Ronald Abelson  
Examiner  
Art Unit 2663

*RA*  
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March 15, 2002



MELVIN MARCELO  
PRIMARY EXAMINER